



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,610	09/05/2006	Mario Scholz	032301.592	3091
441	7590	09/01/2010	EXAMINER	
SMITH, GAMBRELL & RUSSELL			SALVITTI, MICHAEL A	
1130 CONNECTICUT AVENUE, N.W., SUITE 1130				
WASHINGTON, DC 20036			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	DELIVERY MODE
			09/01/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/591,610	SCHOLZ ET AL.
	Examiner	Art Unit
	MICHAEL A. SALVITTI	1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 April 2010.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-6 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 8th, 2010 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 4, reciting a bulk density of at "least approximately 120 g/L" is lacking support in the disclosure.

The instant specification provides no support for compacted bulk densities above 266 g/L; values above this amount have been interpreted to be new matter. The value

266 g/L is seen in the data in Table 3. The written description does not teach or suggest compacted bulk densities larger than 266 g/L.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1: Claim 1 recites the limitation “DBP value”. This acronym is undefined in the instant specification and claims. A method of quantifying DBP (testing parameters) is not specified, and it is indefinite as to what the quantity “DBP value” refers.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,331,588 to *Azechi et al.*

Regarding claims 1-2: *Azechi* (Example 1, col. 8) teaches a silicone rubber containing an effective amount (27.6% pbw see Table 1; 40 parts filler in 145 parts total

Art Unit: 1796

composition) of structurally modified (col. 5, lines 10-23) hydrophobic pyrogenic (fumed) silica (*Azechi* col. 7, lines 55-67). These hydrophobic pyrogenic silicas have BET surface area of 180 m²/g (S4; see col. 8 Table).

Although *Azechi* does not show an example wherein the silica is modified with both methyl and vinyl functionality, *Azechi* is clear in teaching modification where both methyl and vinyl functionalities are present. Of the 33 surface modifying agents disclosed by name, 7 incorporate methyl and vinyl functionality (e.g. 1,3-divinyltetramethyldisilazane; *Azechi* col. 5, lines 35-62). Modification incorporating methyl and vinyl functionality has been held to be at once envisaged from the short list of potential modifiers. *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962).

MPEP § 2131.02.

Although *Azechi* is silent regarding the property of a DBP value % <200 or not determinable, the DBP value % of *Azechi* has been held to be inherent for the following reasons: *Azechi* teaches: **1)** pyrogenic (*Azechi* col. 4, line 59); **2)** structurally modified (*Azechi* col. 5, lines 10-23); **3)** methyl and vinyl modified hydrophobic silica (*Azechi* col. 5, lines 35-55), which **4)** has a BET surface area of 100-400 m²/g (*Azechi* col. 4, lines 59-60). “Products of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP § 2112.01 (II). Since all of the components are present in the composition of *Azechi*, it has been held inherent that the composition

of *Azechi* would have the required DBP value % properties. If it is applicant's position that this is not the case: (1) evidence would need to be presented to support applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with the required DBP value.

The property of "high tear propagation resistance" has been interpreted to be inherent to the composition of *Azechi*, since all components of the recited composition are present.

Regarding claim 3: The silicone rubber of *Azechi* is a liquid silicone rubber (see Title, Abstract, col. 1, lines 50-55 and viscosity measurements in Example 1).

Regarding claim 6: All examples in *Azechi* (Table 1) show 100 parts organopolysiloxane, 5 parts organohydrogen polysiloxane and 40 parts silica.
 $40/(100+5+40) \times 100\% = 27.6\%$. This has been interpreted to be "about twenty percent".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,331,588 to *Azechi et al.* in view of U.S. Patent No. 6,384,125 to *Bergstrom*

et al., and further in view of US 2003/0195290 to *Scholz et al.* These rejections of claims 1-3 and 6 under 35 U.S.C. § 103(a) are alternative rejections to the rejections of claims 1-3 and 6 set forth under 35 U.S.C 102(b) above, in the instance that the DBP value is not inherent in *Azechi*.

Regarding claims 1-2: *Azechi* (Example 1, col. 8) teaches a silicone rubber containing an effective amount (27.6 pbw see Table 1; 40 pbw silica in 145 parts total composition) of structurally modified (col. 5, lines 10-23) hydrophobic pyrogenic (fumed) silica (*Azechi* col. 7, lines 55-67). These hydrophobic pyrogenic silicas have BET of 300 m²/g (S4; see col. 8 Table), and are methyl-modified (e.g. hexamethyldisilazane in Example, col. 7).

Azechi is silent showing an embodiment wherein the silica is methyl- and vinyl-modified. *Bergstrom* teaches silica surface-modified with methylvinylchlorosilane (col. 10, line 50). *Azechi* and *Bergstrom* are analogous art in that they are drawn to the same field of endeavor, namely silicone resins comprising surface-modified silica particulates. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to modify the composition of *Azechi* with a methyl- and vinyl-modifier, with the motivation of allowing the ethylenically unsaturated vinyl groups to react with the polyorganosiloxane (*Bergstrom* col. 5, lines 30-33), thereby increasing the affinity of the silica to the polymer resin (*Bergstrom* col. 2, lines 34-40).

Azechi is silent regarding the silica having a DBP value % <200 or not determinable. *Scholz* (Examples 2 and 7) show silica with a DBP value % <200; DBP is stated to be a result-effective variable, wherein higher DBP values result in an increase

in thickening, and vice-versa (*Scholz ¶ [0013]*). *Azechi* and *Scholz* are analogous art in that they are drawn to the same field of endeavor, namely hydrophobically modified silicas having a BET surface area <1000 m²/g, which are used as structural reinforcements in silicone rubber resins. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to utilize a hydrophobic silica with a DBP <200 % in the invention of *Azechi*, with the motivation of ensuring that the resin does not become too viscous to mold.

Regarding claim 3: The silicone rubber of *Azechi* is a liquid silicone rubber (see Title, Abstract, col. 1, lines 50-55 and viscosity measurements in Example 1).

Regarding claims 4-5: *Azechi* is silent regarding the property of compacted bulk density of at least approximately 120 g/L and less than 266 g/L. *Scholz* teaches hydrophobic silica for silicone polymers having a tapped density of 143 g/L (*Scholz* Tables 1-3; ¶ [0318]-[0320]). In the absence of a definition of "compacted bulk density" from the specification, "tapped density" in *Scholz* has been interpreted to be a measurement of compacted bulk density, since the tapping leads to a reduction in volume and increase in density (see prep. method in *Scholz* ¶ [0215]-[0221]). At the time of the invention, it would have been obvious to a person having ordinary skill in the art to ensure that the compacted bulk density of the silica filler of *Azechi* is between 120 g/L to 266 g/L, with the motivation of ensuring that the silica is suitable as a reinforcing filler (*Scholz* ¶ [0124]); a person having ordinary skill in the art recognizes that the compacted bulk density of *Scholz* allows for higher filling levels which lead to markedly improved mechanical properties in the vulcanizates (*Scholz* ¶ [0064]).

Regarding claim 6: All examples in *Azechi* (Table 1) show 100 parts organopolysiloxane, 5 parts organohydrogen polysiloxane and 40 parts silica.
 $40/(100+5+40) \times 100\% = 27.6\%$. This has been interpreted to be “about twenty percent”.

Alternatively, *Azechi* describes the silica filler as a result-effective variable comprising 2-80% of the composition. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to optimize the content of modified silica to about 20% in *Azechi*, with the motivation of providing sufficient mechanical strength (for values on the low end of the range) while avoiding processing difficulties (for values on the high end of the range; *Azechi*, 5:63-6:3).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 7,563,839 in view of USPN 6,384,125 to *Bergstrom et al.* Although the conflicting claims are not identical, they are not patentably distinct from each other.

Regarding claims 1-2: USPN '839 recites a silicone rubber containing methyl-modified hydrophobic pyrogenic silica having a surface area, as measured by BET, of 25-400 and a DBP value % <200 (US '839 claim 3).

USPN '839 is silent regarding modification of the silica with a vinyl. *Bergstrom* teaches silica surface-modified with methylvinyldichlorosilane (col. 10, line 50). USPN '839 and *Bergstrom* are analogous art in that they are drawn to the same field of endeavor, namely silicone resins comprising surface-modified silica particulates. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to modify the composition of USPN '839 with a vinyl modifier, with the motivation of allowing the ethylenically unsaturated vinyl groups to react with the polyorganosiloxane (*Bergstrom* col. 5, lines 30-33), thereby increasing the affinity of the silica to the polymer resin (*Bergstrom* col. 2, lines 34-40).

Regarding claim 3: USPN '839 recites liquid silicone rubber (LSR; claim 3).

Claims 1-2 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of USPN 7,713,626.

Regarding claims 1-2: USPN '626 recites a silica rubber (claim 3) comprising pyrogenic, structurally modified methyl- and/or vinyl- modified filler. The silica has a surface area between 103-400 m²/g and a DBP value % of <200 or not determinable.

USPN '626 does not require both vinyl and methyl silica modification; however the embodiment of a mixture containing both vinyl and methyl modification is at once envisaged from the description describing "mixtures thereof" immediately following the modifying substances.

Response to Arguments

The following responses are directed to the document entitled "Remarks" (pages 3-10), received April 8th, 2010.

A) With respect to the previous rejection of claims 1-4 as being indefinite, the previous rejection made under 35 U.S.C. § 112, second paragraph has been withdrawn, as per the Advisory Action mailed 03/03/2010. Any rejections made under 35 U.S.C. § 112, second paragraph and not repeated herein have been withdrawn.

B) Applicant's arguments concerning the rejection of claim 4 under 35 U.S.C. § 112, first paragraph for written description/new matter have been considered, but have not been found to be persuasive.

In response to applicant's arguments concerning the upper limits of silica density (pages 3-4), the Examiner is in agreement with the applicant that silica has a finite upper density. However, the issue at hand is that the highest density supported in the written description, which is 266 g/L, a data point in Table 3, Sil 7. Values higher

than 266 g/L are not supported in the specification, and have been treated as new matter.

With respect to applicant's citation of USPN 6,193,795 to *Nargiello*, it is noted that *Nargiello* achieves a bulk density of 308 g/L by deconstructing Aerosil 300, as applicant points out. However, *Nargiello* is presumably utilizing a different process than the instant invention to achieve this goal, since the instant application achieves a maximum of 266 g/L for the identical species (Aerosil 300; Sil 7 in Tables 2-3 in instant specification); furthermore there is no teaching or suggestion in the specification that values higher than 266 g/L are desirable, or achievable. In view of the above, it is the Examiner's position that compacted bulk densities greater than 266 g/L constitute new matter, and are not necessarily inherent to the instant specification, and lack support in the disclosure.

C) Applicant's arguments with regard to the rejection of claims 1-3 under 35 U.S.C. § 102(b) to *Azechi* (USPN 6,331,558) have been fully considered but they are not persuasive.

1) With respect to the limitations of DBP properties (page 5), in the rejection set forth under 102(b) to *Azechi*, it is noted that *Azechi* is silent regarding the property of DBP value. Evidence has been set forth regarding the inherency of this property, namely *Azechi* teaching a structrually modified hydrophobic pyrogenic silica; methyl and vinyl modification is taught with sufficient specificity; and the BET surface area is within the recited range. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are

inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP § 2112.01 (II).

2) Applicant's arguments (page 5) with respect to the mechanical agitation of the instant invention being different than that of *Azechi*, it is noted that this feature is not claimed. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the absence of claimed agitation processes or product limitations differentiating the claimed invention from *Azechi*, the claims as presently amended read on the structurally modified silicas of *Azechi*.

D) Applicant's arguments with regard to the rejection of claims 1-3 under 35 U.S.C. § 103(a) to *Azechi* (USPN 6,331,558) in view of *Bergstrom* (USPN 6,384,125) have been fully considered but they are not persuasive.

In response to applicant's argument that *Bergstrom* is nonanalogous to *Azechi* due to the use of precipitated silicas, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, *Azechi* and *Bergstrom* are concerned with solving the particular problem of ensuring compatibility between silica and silicone resin by means of hydrophobically modifying the silica filler. As *Azechi* points to vinyl and methyl modification of the silicas (*Azechi* col. 5), a person having ordinary skill in

the art would have found it obvious to modify the silicas of *Azechi* with methyl and vinyl, with the motivation of allowing the ethylenically unsaturated vinyl groups to react with the polyorganosiloxane (*Bergstrom* col. 5, lines 30-33), thereby increasing the affinity of the silica to the polymer resin (*Bergstrom* col. 2, lines 34-40).

E) Applicant's arguments, with respect to the rejection(s) of claim(s) 4 under 35 U.S.C. 103(a) as being unpatentable over the combination of *Azechi* in view of *Bergstrom*, further in view of *Kobayashi* have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of US 2003/0195290.

F) Applicant's arguments with respect to the rejection of claims 1-3 on grounds of non-statutory obviousness-type double patenting of USPN 7,563,839 have been considered, but have not been found persuasive.

The double patenting rejection over USPN 7,563,839 has been updated to reflect the currently amended claims. Applicant's argument that USPN 7,563,839 requires conductive carbon black are not persuasive, for the reason that the present claims possess an open-ended transitional phrase ("containing"), which does not exclude the presence of additional components.

G) Applicant's arguments with respect to the rejection of claims 1-2 on grounds of non-statutory obviousness-type double patenting of copending application 10/591,609 (now USPN 7,713,626) have been considered, but have not been found persuasive.

The double patenting rejection has been updated to reflect the presently amended claims and the most current claim language 10/591,609, which has been granted in the interim as USPN 7,713,626. Applicant's argument that USPN 7,713,626 is a product-by-process and the process steps must be considered in the determination of infringement is not persuasive. The Examiner notes that the instant application is in the stage of prosecution and not the stage of litigation, and refers applicant to MPEP § 2113 for current protocol in the prosecution of product-by-process claims.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. SALVITTI whose telephone number is (571)270-7341. The examiner can normally be reached on Monday-Thursday 8AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

/M. A. S./
Examiner, Art Unit 1796